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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,848	12/21/2000	Vladislav Vashchenko	NSC1-H2000 (P04846)	4415

7590 03/26/2004
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EXAMINER

NADAV, ORI

ART UNIT PAPER NUMBER

2811

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/747,848

Applicant(s)

VASHCHENKO ET AL.

Examiner

ori nadav

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 31-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko et al. (6,693,325).

Ko et al. teach in figure 2 and related text an ESD protection structure (column 1, lines 25-36) comprising

- a P type semiconductor region 100a having a first conductivity type,
- an isolation region 110, 112a that contacts the semiconductor region,
- an N-well region 114 that contacts the semiconductor region, contacting the isolation region, not contacting an N+ region and having a dopant concentration less than that of the first region,

- an N+ first region 130 formed in the semiconductor region and being spaced apart from the N-well region 114, no N type region having dopant concentration greater than that of the well region lying between the first region and the isolation region, and

- a P+ second region 112 that contacts the well 114, contacting the isolation region, the first region 130 and the second region 112 lying on opposite sides of the isolation region, no P type region having dopant concentration greater than that of the

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semiconductor material lying between the second region 112 and the isolation region, wherein the second line not being connected to the first line.

The embodiment of figure 2 does not depict N+ first region 130 contacting the semiconductor region 100a, and does not explicitly state that the structure is used as an ESD protection device. Ko et al. teach forming the device without P well 116 (column 5, lines 41-43), such that the N+ first region contacts the semiconductor region 100a. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the device without P well, such that the N+ first region contacts the semiconductor region 100a, and to use the device as an ESD protection device, in order to simplify the processing steps of making the device, and in order to use the device in an application which requires an ESD protection, respectively.

Regarding the recitation of using the device as an ESD protection device has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Regarding claims 34-36, 41-44 and 47-48, Ko et al. do not disclose first and second lines including a ground line and I/O power line. However, Ko et al.'s device must be connected to a ground line, and an I/O power line in order to operate.

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to connect the first and second lines to a ground line and I/O power line, in order to operate the device.

Claims 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko et al. in view of Monticelli (4,758,873).

Regarding claim 49, Ko et al. teach substantially the entire claimed structure, as applied to claim 31 above, except connecting the ESD device to a differential amplifier, wherein the second region is connected to the amplifier and the first region is connected to a positive differential voltage. Monticelli teaches in figure 1 and related text the need for an ESD device to be connected to a differential amplifier in order to prevent damage to the input transistors of the amplifier. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to connect Ko et al.'s device to a differential amplifier, wherein the second region is connected to the amplifier and the first region is connected to a positive differential voltage in order to operate the device in an application which requires a differential amplifier.

Regarding claim 50, Ko et al. do not teach in figure 2 a second protection diode.

Monticelli teaches in figure 1 a second protection diode. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a second protection diode in Ko et al.'s device in order to operate the device in an application which requires two protection diodes.

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Response to Arguments

Applicant's arguments with respect to claims 31-50 have been considered but are moot in view of the new ground(s) of rejection.

Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(571) 272-1660**. The Examiner is in the Office generally between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**

A handwritten signature in black ink, appearing to read 'Ori Nadav', is positioned above the printed name and title.

O.N.
March 15, 2004

ORI NADAV
PATENT EXAMINER
TECHNOLOGY CENTER 2800